

**UNITED STATES DEPARTMENT OF COMMERCE****Patent and Trademark Office**Address: COMMISSIONER OF PATENTS AND TRADEMARKS
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/847,935 04/28/97 KELLER

R 002240.P045

EXAMINER

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PM21/0731

LOUIS JACQUES, J

ART UNIT	PAPER NUMBER
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3614

DATE MAILED:

07/31/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

See attached.

Office Action Summary	Application No. 08/847,935	Applicant(s) Keller et al
	Examiner Jacques H. Louis-Jacques	Group Art Unit 3614

Responsive to communication(s) filed on Apr 28, 1997

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 1-14 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

Claim(s) _____ is/are allowed.

Claim(s) 1 and 4-14 is/are rejected.

Claim(s) 2 and 3 is/are objected to.

Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on _____ is/are objected to by the Examiner.

The proposed drawing correction, filed on _____ is approved disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All Some* None of the CERTIFIED copies of the priority documents have been

received.

received in Application No. (Series Code/Serial Number) _____.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. This office action is responsive to application filed on April 28, 1997.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

See attached PTO form 948.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dano [4,398,195] in view of Teach [5,334,987].

Dano '195 discloses a method of an apparatus for guiding agricultural aircraft including a microprocessor for controlling a radar trilateration system used on board of the aircraft for providing pattern flying (form line). Based on of a plurality of (two or more) transponders set up at known locations (terrestrial locations) a baseline (form line) is established. In column 1, Dano recognizes the disruptive transmission factors caused by extraneous objects to reflect radar signals and give false readings to the aircraft. In column 2, Dano explains the spray over a swath (which

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is about 44 feet wide). In column 4, Dano details the correction or update of the pattern (form line). See lines 24-40. In the claim section, more specifically, Dano discloses that there are provided means for forming a line or baseline between two or more points and means onboard of the vehicle for rejecting detected distances which are inconsistent with previously detected distances. Although Dano discloses a radar trilateration system, Dano, however, does not specifically teach the form line using one or more terrestrial locations and a second form line using data derived from G.P.S. data and swathing offset. Teach, on the other hand, discloses an agricultural aircraft control system using [the] global positioning system for applying chemicals to an agricultural field in one of a plurality of flight patterns. The global positioning system receiver receives radio frequency signals from satellite and the position of the aircraft is determined from the information contained in the received signals. A computer onboard of the aircraft stores the surface coordinates. The aircraft pilot enters the desired orientation, swath width and track width of the flight pattern into the computer. See columns 2 and 3. Both Dano (figure 15, item 440) and Teach (figure 1, item 112 and figure 4) disclose a display device. Also, both Dano and Teach discloses the control of the aircraft, thus the steering thereof. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the method of and apparatus for guiding the agricultural aircraft of Dano by incorporating the features from the agricultural aircraft control system using global positioning system of Teach because such modification will provide a more accurate path control, thereby ensuring uniform coverage through the field.

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Allowable Subject Matter

5. Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to teach the combination of following the second form line defined by the positioning data and swathing offset, deviating from the second form line to accommodate one or more terrain features, collecting new G.P.S. data during the following and deviating steps for computing one or more positions therefrom and defining an updated second form line using the computed positions.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.	4,939,663	Baird	Jul. 1990
b.	5,204,814	Noonan et al	Apr. 1993
c.	4,967,362	Schutten et al	Oct. 1990

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jacques H. Louis-Jacques** whose telephone number is **(703) 305-9757**.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Group Receptionist** whose telephone number is **(703) 308-1113**.

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8. Any response to this action should be mailed to:

**Commissioner of Patents and Trademarks
Washington, D.C. 20231**

or faxed to:

(703) 305-7687, (for formal communications intended for entry, please indicate as so; and for informal or draft communications, please label "PROPOSED" or "DRAFT")

/jlj
July 24, 1998

Jacques Louis Jacques
JACQUES H. LOUIS-JACQUES
PRIMARY EXAMINER